Impact and management of malignant wounds

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Programme

- Malignant Wounds – incidence, etiology, wound-related problems and treatment
- Video – malignant wounds
- A pilot study with breast cancer patients and malignant wounds (n=12) – findings
- An RTC-study with cancer patients and malignant wounds (n=69) – quantitative and qualitative findings
- Malignant Wounds Management
Malignant Wounds


- 5-10% of all cancer patients develop malignant wounds (Adderley & Smith 2007).

- Not only breast cancer wounds – 80% in my RTC-study. (Lund-Nielsen 2011 a+b). Same etiology as in other cancer diagnoses (Wilson 2005)

- Mostly patients > 60 years – advanced cancer (Grocott 2007)

- Malignant wounds are chronic wounds – the realistic goal is palliation – not healing (Alexander 2009)
Klik i menulinjen, dato og "Enhedens
Wound-related Problems

- **Exudation** (Selby 2009)
- **Odor** (Draper 2005)
- **Bleeding** (Grocott 2000)
- **Pain** (Haisfield-Wolfe & Baxendale-Cox 1999)
- **Infection/Colonization** (Hampton 2008)
- **Psychosocial Problems** (Alexander 2010; Lo et al 2008; Piggin & Jones 2009)
  - Depression
  - **Shame**
  - Altered Body Image
  - Social Isolation
Malignant Wounds Treatment

- Antineoplasmin Therapy
  - Chemotherapy
  - Antihormon Therapy
  - Radiation Therapy
  - Electro-Chemotherapy (Matthiessen et al. 2011)

- Optimal Wound Management

- Psychosocial and Existential Care
Advanced Cancer

Cancer symptoms and side effects from antineoplasm treatment:

- Fatigue
- Pain
- Nutrition Problems/Appetite Loss
- Nausea and Vomiting
- Stomatitis
- Lymphedoema
- Anxiety and Depression etc.
Pilot Study

Objective: To develop a systematic and structured wound treatment based on knowledge, quality, and continuity.

Aim:

- 12 women with advanced breast cancer and malignant wounds
- Included from two Oncology departments in Denmark (Rigshospitalet and Næstved Hospital)

Lund-Nielsen B; Müller K; Adamsen L.
Journal of Wound Care, 2005

Lund-Nielsen B; Müller K; Adamsen L.
Journal of Clinical Nursing, 2005
Intervention in the Pilot Study

- Continuity (same nurse)
- Modern Wound Healing Principles
  - Humid wound healing
  - Constant wound temperature
  - Contamination prevention
  - Necrosis removal
  - Wound surroundings protection
  - Compliance with patient needs
- Modern Wound Healing Products
  (Carbon/Silver dressing, hydrogel and hydro cellular dressing)
- Dialog and psychosocial support (1 hour weekly)

*The intervention took place over a four week period in the homes of the 12 women*
Pilot Study Results

- For 7 out of 12 women the wound was smaller post intervention – for one woman the wound healed completely
- For 9 out of 12 women the wound was more vascularized post intervention
- For 7 out of 12 women the wound showed increased granulation tissue post intervention
- The wounds had a negative influence on the women’s feeling of femininity and sexuality and increased social isolation
- The women rated the bandages as powerful to control odor and exudation – though odor was still a problem
Pilot Study Results
Baseline/Post Intervention Pictures

Wound 1
Baseline 3,0 x 5,5 cm

Wound 2
Baseline 4,0 x 9,0 cm

Wound 1 og 2
Post intervention 0 cm

Baseline: 9,5 x 14,0 cm

Baseline 15,0 x 16,0 cm

Post intervention 7,8 x 10,8 cm

Post intervention 8,0 x 15,0 cm
Conclusion — Pilot Study

- The intervention indicated that it was possible to:
  - Improve wound healing (increased granulation tissue, decreased necrosis)
  - Increase independence and security for the women

- There are still problems with malodor, affected body-image, anxiety and the feeling of social isolation
Malignant Wounds in Patients with Advanced Stage Cancer. A randomized clinical intervention study - quantitative and qualitative findings

- 75 cancer patients of both genders with cancer wounds and different cancer diagnoses were included from the oncology departments of the Copenhagen University Hospital and from 10 hospitals all over Denmark.

- The intervention took place over a four-week period in the homes of the patients. BLN and three specialized wound care nurses took care of the patients.
Inclusion and Exclusion Criteria

**Inclusion:**
- Patients with advanced cancer and malignant wounds
- Men and women > 18 years old under outpatient treatment/follow-up
- Malignant wound ≥ 1.5 cm²
- Danish reading, speaking and writing skills

**Exclusion:**
- Life expectancy < 3 months
- < 3 months after radiation therapy was applied to the wound area
- Cancer patients with dementia or psychosis
Purpose

- To investigate whether treatment of malignant wounds could be improved, by comparing the effects of two physical and psychosocial interventions, both lasting four weeks:

  *Silver Coated Bandage vs. Honey Coated Bandage in combination with Psychosocial support (based on the cognitive therapy model) and Relaxation training*
Hypothesis - methods

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Methods</th>
<th>Triangulation</th>
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</thead>
<tbody>
<tr>
<td>Intervention with: Honey coated bandages in combination with cognitive dialogues and relaxation training are superior to Silver coated bandages in combination with cognitive dialogues and relaxation training on:</td>
<td>Primary outcome: Wound Size (As a sign on wound healing)</td>
<td>Photo – digital. Software-programme Quantify Image Central (mm²-precision)</td>
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<td>Wound related secondary outcome: Wound healing potential- increased granulation tissue and vascularity, and decreased necrotic tissue and fibrin. Colonisation/infection in the wound Odor Exudation Wound pain</td>
<td>Assessment of wound healing potential on photos via &quot;blinded&quot; wound care nurses. Agreement between the four observers was evaluated using Cohen's Kappa score Qualitative wound swaps VRS – four-step scale and VAS-scale</td>
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<td></td>
<td>Other secondary outcome: Anxiety and depression Coping Health related quality of life</td>
<td>Hospital Anxiety and Depression Scale (HADS) Mini-Mental Adjustment to Cancer (Mini-MAC) EORTC-QLQ-C30- Quality of Life</td>
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<td>To investigate the impact of the intervention on the nature of psychosocial problems and reactions</td>
<td>Semi-structured qualitative interviews</td>
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Measurement of Digital Images – Quantify Image Central
Intervention – Silver-coated Bandages
(Fong & Wood 2006, Jørgensen et al. 2006, Bergin & Wraight 2006)

Nano-crystalline Silver Bandage

Benefits:
• Makes a broad-spectrum anti-microbial barrier (> 150 pathogens) in the presence of wound fluids
• Anti-inflammatory properties
• Inactivates bacterial DNA and RNA
• Impairs bacterial cell wall integrity
• Binds and disrupts sub-cellular components
• Impairs essential enzymes and metabolic events

Disadvantages:
• Black staining of tissue
• Wound Pain
• Allergy
• Environment issue (heavy metal)
• Bacterial resistance (Lansdown & Williams 2007)
Intervention – Honey-coated Bandages

Honey
(Manuka – Leptospermum Scoparium plants from New Zealand) has antiseptic properties

Benefits:
• Inhibiting effects on about 60 species of bacteria
• UMF 12+. Compares the effect of honey on Staphylococcus Aureus – equivalent with 12% phenol (UMF12=12% phenol)
• Osmotic effect – high sugar content
• Acidic pH-value (3-6). Assists the bacteria-destroying action of macrophages
• Releases low levels of hydrogen peroxide
• Stimulates angiogenesis and formation of fibroblasts
• Non-toxic to tissue
• No bacterial resistance (Cooper et al. 2010)

Disadvantages:
• Wound Pain – the acid stimulates nociceptors to pain
• Smell of honey – “greasy”
• Allergy
Cognitive Intervention – Dialogs and Relaxation Training

**Dialogs structured after the cognitive model:**
- Reduces cancer-related anxiety and depression
- Increases coping skills
- Improves communication between patient and partner (Moorey & Greer 2006)

**Relaxation training:**
- Effect on anxiety, depression, sleep and diversion from heavy thoughts (Wolpe 1969, Benson & Klipper 2000, Cheung et al. 2003, Baider 2001)
Results – RCT-study

- No statistically significant difference between honey-coated and silver-coated bandages when measuring wound size, wound healing potential, exudation, odor, pain and bacteriology.

- On pooled data (n=69)
  - Wound size reduction in 62%
  - Increased wound healing potential in 58% of the wounds

- Two wound healed completely – small area and superficial (2.44 cm² and 1.98 cm²)
Patients with reduced wound size from baseline to post intervention had a median survival of 387 days compared with 134 days for patients with no reduction in wound size (p = 0.003)
Results – odor, exudation, anxiety and depression from baseline to post intervention

- There was a statistically significant improvement for both treatments in the patient’s assessment of:
  - Odor (p=0.007) (VAS scale)
  - Exudation (p<0.0001) (VAS scale)
  - Anxiety (p=0.007) (questionnaire)
  - Depression (p=0.049) (questionnaire)

- Odor - measured on VRS for both treatments from baseline to post intervention: p=0.036
Bacteriology – Silver and Honey

No statistically significant difference on wound pathogens from baseline to post intervention between silver-coated and honey-coated bandages

No influence of anti-neoplasmin or antibiotic treatment on the bacteriology

97% of the wounds were colonized with at least one bacteria (median 2 (range 1-4)).

Therefore: Don’t take swaps unless there are general signs of infection
Ignoring Breast Cancer Wounds

- Interviews in the RTC-study – some patients with breast cancer had ignored the wound because of overwhelming responsibility and grief as primary caregiver and bereaved (developed Health Care Avoidance)
- 31% of breast cancer patients in the RCT-study (n=17) reacted with ignoring and concealment
- The women did not seek medical attention for 24 month (median) (range 3-84 month). They finally went to the doctor because of spontaneous bone fracture, dyspnoea (lung metastasis) or bleeding from the wound

Lund-Nielsen B; Midtgaard J; Rørth M; Gottrup F; Adamsen L. Cancer Nursing 2011
Conclusion

- No statistically significant difference between silver-coated and honey-coated bandages
- A wound size reduction for 62% of the patients, an increased healing potential for 58% of the wounds for both treatments indicated increased wound healing
- A significant reduction of odor, exudation, anxiety and depression for both treatments increased the patients wellbeing
- Traumatizing strains can cause ignoring of one’s own signs of cancer symptoms. *Patient-related delay* and mortality in breast cancer cases may be reduced by informing women who are primary care givers or bereaved
- The results indicate that an intervention with silver-coated or honey-coated bandages – in combination with cognitive conversations and relaxation training – is recommended for use in the treatment of patients with malignant wounds
Malignant Wounds Management

Based on general wound healing principles:

- Provide humid wound healing (moist-preserving dressing)
- Keep constant wound temperature (change of dressing only if necessary)
- Protect wound against contamination (clean procedures - Use tap water (in Denmark!) at about 32°C, close-fitting dressings)
Malignant Wounds Management

- Remove necrosis carefully - malignant wounds can bleed easily. Use hydrogel and carefully - scissors and tweezers
- Prevent secretion formation (absorbent dressings)
- Protect wound surroundings (barrier cream)
- Protect adhesion surfaces (barrier film)
- Use relevant dressing
- Meet patient’s needs and wishes
Malignant Wounds Management

**Exudating or bleeding wounds:**
- **Hydrofiber product/alginate:** e.g. Aquacel, or Algisite M
  + **Foam:** e.g. Allevyn Adhesive or Mepilex

**Necrotic or fibrinous wounds:**
- **Hydrogel** ("dry wounds"): e.g. IntraSite Gel
- **Hydrofiber product/Alginate** (Exudating wounds): Aquacel, Algisite M
  + **Foam:** e.g. Allevyn Adhesive or Mepilex

**Malodorous or infected/colonized wounds:**
- **Silver** (effect on the bacteria producing the odor): e.g. Acticoat
- **Honey** (effect on the bacteria producing the odor): e.g. Algivon
- **Charcoal** (effect only on the odor): Carbonet
  + **Foam:** e.g. Allevyn Adhesive or Mepilex
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